

No. 5 (Plate VI. fig. 5, twice nat. size).—Length $\frac{1}{2}$ inch. Handle stout. Lamella about a third of the whole, 2 lines broad at the broadest part, somewhat elliptical in shape, convex on one side, concave on the other, armed with about fifteen stout closely-placed teeth, which are longest in the centre, gradually diminishing in length on both sides. This plate somewhat resembles my No. 2; but the teeth are much stouter, more erect, and have no definite space between their bases, as most of the previously described forms have. In these characters it approaches the Bohemian examples, and also somewhat Mr. Barkas's figures in the 'Geological Magazine' (*loc. cit.*), if the latter correctly represent his specimens. Dr. Traquair has kindly allowed me to examine his specimens of *Euctenius*; and there can be no doubt of the identity of the two.

Found by Mr. W. T. Kinnear in the ironstone of Burgh Lee, near Edinburgh, and now in my collection.

XI.—*On some Mammals from the North-west Frontier of Kashmir.* By J. SCULLY.

THE following notes are founded on a small but interesting collection of mammals made by Major J. Biddulph during the course of last year in Astor, Gilgit, Yassin, and Deosai—districts in the extreme north-west part of Kashmir or on the frontier of the state in that direction. A note on the mammalian fauna of the first three places above mentioned, with a slight sketch of their physical aspects, will be found in a paper written by me in Proc. Zool. Soc. 1881, p. 197; of Deosai, which I have not visited, I quote the following description from Mr. F. Drew's 'Juminoo and Kashmir Territories,' p. 376 (1875):—

"Deosai is a plateau, a mass of high land, surrounded by yet higher mountains. The centre of it lies 25 miles south-south-west from Skārdū*, while the nearer edge is only 10 miles from that place. There is a ring of mountains, irregular, but still of a general circular form, the diameter of which from crest to crest of the ridge is about 25 miles. These mountains make a rugged serrated barrier of a height of from 16,000 to 17,000 feet. Within this ring is flat, though not completely flat, country, made up of plateaus more or less separated by flat valleys a few hundred feet below

* Skārdū or Iskardo is the capital of Baltistan (Little Thibet), and is situated in lat. 35° 22' N. and long. 75° 27' E.

them in level. This flat part varies in height from 12,000 to 13,000 feet, according as we measure a valley or an intermediate plateau, or according as we take the measure away from or near to the mountains."

The collection sent to me by Major Biddulph comprises well-preserved specimens of eight species, on each of which I proceed to make a few remarks.

Martes foina (Erxl.).

Male, Gilgit (5000 feet), October.

Length of head and foot 18 inches, tail 10, hairs at end of tail 3, hind foot from heel *s. u.* 3·05, fore foot *s. u.* 2·03, length of ear 1.

Dark brown above and below, the feet and tail nearly black. On the throat and breast a large white patch reaching to the forearms, in the central part of which there are several irregular brown spots. Face and chin earthy brown, palest on the cheeks; ears brown, with complete white margins. The underfur, on all the parts which are brown, is brownish grey. The exposed feet-pads fleshy; claws dusky at base, whitish at tip.

The following are the dimensions of the skull:—

	metre.
Total length from occiput	·080
Inferior margin of foramen magnum to incisors .	·071
Posterior margin of bony plate to incisors	·037
Greatest breadth across zygomatic arches	·047
Greatest breadth of brain-case	·038
Least breadth of brain-case behind postorbital processes	·021
Length $\frac{pm. 4}{m. 1}$	·010
Breadth $\frac{pm. 4}{m. 1}$ anteriorly	·005
Breadth $\frac{m. 1}{m. 1}$	·008
Length $\frac{m. 1}{m. 1}$ externally	·004
Length $\frac{m. 1}{m. 1}$ internally	·006
Length of mandible (condyle to symphysis)	·052
Height of mandible to coronoid process	·024
Length $\frac{m. 1}{m. 1}$	·010
Length $\frac{m. 1}{m. 2}$	·004

This specimen is considerably darker and more richly coloured than any specimens of *M. foina* hitherto obtained from Gilgit. In a large series of Beech-Martens from that locality which I have examined there is much variation in the length, softness, and colour of the fur, while the underfur

varies from white to brownish grey. There can be little doubt that *M. leucolachnea*, Blanford ('Scientific Results of Second Yarkand Mission,' Mammalia, p. 26, 1879), and *M. intermedia*, Severtzoff (Ann. & Mag. Nat. Hist. 1876, xviii. p. 46), are merely varieties of *M. foina*, and not entitled to specific rank.

Mustela temon, Hodgson.

Adult specimen, Chashi, Yassin (9500 feet), August.

Head and body 9·5 inches, tail 5·5, hairs at end of tail 0·65, nose to ear-orifice 1·45, length of ear from orifice 0·45, hind foot from heel *s. u.* 1·55, fore foot *s. u.* 0·75.

General colour above tawny brown, darker on the head; tail like the back, but tinged with rufous and slightly paler on the lower surface, tip darker brown than the rest of the organ. Limbs externally like the back, but white over the toes. Lips and chin white, rest of lower surface pale yellow.

Measurements of skull:—

	metre.
Length from inferior margin of foramen magnum to end of premaxillaries	·045
Greatest breadth across zygomatic arches.....	·028
Greatest breadth of brain-case behind posterior termination of zygoma.....	·025
Least breadth of brain-case behind postorbital processes	·011
Length of bony palate from symphysis of premaxillaries	·022
Length from posterior margin of anterior palatine foramina to hind margin of palate.	·018
Breadth of palate between inner tubercles of <i>pm. 3</i>	·008
Length of <i>pm. 3</i> along outer margin	·006
Breadth of <i>m. 1</i>	·004
Length of mandible from condyle to symphysis.	·028
Height of mandible to coronoid process	·013

This weasel is probably the same as the animal included by Dr. Severtzoff in the "Mammals of Turkestan" (Ann. & Mag. Nat. Hist. 1876, xviii. p. 45) under the name of *Factorius alpinus*. I employ the specific name given by Mr. Hodgson, for reasons mentioned in Proc. Zool. Soc. 1881, p. 203.

Lutra vulgaris, Erxl.

A young otter captured at Gilgit on the 3rd June, at an elevation of 5000 feet, seems to be referable to *L. vulgaris*. The following is a description of the specimen:—

Head and body 15·5 inches, tail 7·8, nose to ear-orifice 3, length of ear from orifice 0·6, hind foot from heel *s. u.* 2·9, fore foot *s. u.* 2.

Head above and body greyish brown, on the head, upper part of neck, and sides of body with some pale hairs intermixed with the brown ones; the underfur grey. Tail brown above, greyish white below, and blackish brown at tip above and below. Lips, sides of face, and whole under surface greyish white, the underfur greyish brown; lower lip, chin, and centre of throat cream-coloured.

Sciuropterus fimbriatus, Gray.

An example of this flying squirrel, captured at Gilgit in August, at an elevation of 6000 feet, measures:—

Head and body 7·8 inches, tail 9, hairs at end of tail 1·7, nose to ear-orifice 2, length of ear from orifice 1·2, hind foot from heel *s. u.* 2, fore foot *s. u.* 1·3.

This specimen differs a little from the others collected in the district in being whiter below and in having a patch of black on the middle of the back.

Arctomys caudatus, Jacq.

In the collection is a specimen of a young marmot captured in the Deosai plain, at an elevation of 12,000 feet, in July, which is clearly referable to this species. The following is a description of the specimen:—

Head and body 9 inches, tail 3·7, hairs at end of tail 1·8, hind foot from heel *s. u.* 2·3, fore foot *s. u.* 1·5, nose to anterior canthus 1·2, nose to ear-orifice 2·2, length of ear from orifice 0·5.

The nose and lips are black; a black ring surrounds the eye. The top of the head, sides of face and body, and rump yellow tawny; on the nape there is a distinct black band, cowl-like, sharply separating the tawny-coloured head from the back, which is mixed tawny and black, the latter colour predominating; on the whole upper surface and sides the fur is black at the base. Whole lower surface tawny yellow, washed with rufous on the centre of the throat and breast; limbs tawny, slightly washed with rusty and nigrescent on the toes. Tail tawny on basal two thirds, with a central black stripe on the lower surface; distal third of tail black, with yellow tips to some of the hairs.

This example is of interest in several respects. It shows that the coloration of the young animal closely resembles that of the adult, the black cowl on the nape being characteristic;

as in the adult, the length of the tail, including the hairs at the tip, is more than half the length of the head and body. Further, the determination of the species of marmot living on the Deosai plateau, hitherto doubtful, may now be considered settled. Lastly, the specimen described above shows conclusively that the young marmot from Turkestan, referred by Dr. Severtzoff to *A. caudatus* (Ann. & Mag. Nat. Hist. 1876, xviii. p. 50), could not have belonged to that species. The proportions there given are not those of the species under consideration: *A. caudatus* with a tail "8 inches 5 lines" would have the head and body about 17 inches long, not "14 inches 2 lines;" moreover Severtzoff's description of his marmot, where he says that "the head was darker and blackish" in contrast with the general colour of the animal, is exactly the reverse of what obtains in *A. caudatus*.

Mus sublimis.

Mus sublimis, Blanford, Scientific Results of the Second Yarkand Mission, Mammalia, p. 51 (1879).

The following is the description of a mouse collected by Major Biddulph in the Astor district, in September, at an elevation of 11,000 feet:—

Head and body 2·8 inches, tail 4, hairs at end of tail 0·15, nose to ear-orifice 0·8, length of ear from orifice 0·4, hind foot from heel *s. u.* 0·73.

Colour above sandy brown, below greyish white, the colours not very distinctly separated. Fur soft and long, about 0·3 on the middle of the back; all except the tips both above and below slate-grey, the terminal portions of the hairs being fulvous or brown above, and whitish below. On the upper surface numerous long fine black hairs are intermixed with the shorter fur. Face rather paler than the back, the whiskers brown at base and white for the greater portion of their length. Ears well covered with fine hairs, and uniform rich brown. Feet well clad with shining silvery-white hairs; tail covered with short bristly hairs, pale brown above, lighter below. The tail tapers gradually from base to tip, and is nearly half as long again as the head and body; the hind feet are long, with the hinder tubercle large and elongated.

The following are measurements of the imperfect skull of this specimen:—

	metre.
Breadth of frontal region between orbits	·004
Breadth of muzzle in front of infraorbital foramen	·003
Length of nasals	·007

	metre.
Length of anterior palatine foramina	·0035
Length of bony palate from incisors to opening of posterior nares	·008
Length of bony palate behind anterior palatine foramina	·0035
Length of row of upper molars	·0035
Distance between anterior molars and incisors .	·005
Breadth of palate between anterior molars . . .	·003
Length of mandible from condyle to sym- physis	·011
Length of row of lower molars	·004

The specimen above described agrees fairly with Mr. Blanford's description of *M. sublimis* (loc. cit.) ; only the tail is nearly an inch longer than in the only example known of that species, the type, a female obtained by the late Dr. Stoliczka at Tankse, west of the Pankong lake in Ladak, at an elevation of 13,000 feet. My specimen, which was obtained miles away from any habitation, is probably a male, and doubtless belongs to the species described by Mr. Blanford. Of the better-known Indian mice this species comes nearest to *Mus urbanus*, but is distinguished by its proportionally longer tail and much longer feet. The habits of the two species are very different.

Lagomys macrotis, Günther.

A specimen obtained near Gilgit, in July, at an elevation of 7500 feet, measures :—

Head and body 7·2 inches, nose to anterior margin of eye 0·92, nose to ear-orifice 1·95, length of ear from orifice 1, hind foot from heel *s. u.* 1·25, fore foot *s. u.* 0·75, hair on middle of back 0·7.

This example agrees fairly with the type of the species ; the forehead and crown are rufous. It differs from a specimen obtained in the Gilgit district in October (P. Z. S. 1881, p. 207) in the tips of all the hairs on the back being fulvous, and in not having a rufous gorget.

Lagomys Roylei, Ogilby.

A specimen of *Lagomys* from Deosai (12,000 feet), collected in July, is obviously distinct from the preceding species.

Colour above greyish brown, much mixed with black on middle of back, and rufous on forehead and nape ; sides of face and body rufous ; lower surface whitish. The fur throughout is dark slate-grey, the tips being rufous on the forehead, nape, and sides of the body, and greyish white on the lower parts ; on the back the hairs have fulvous-brown

rings near their ends, and black tips. The extremities are clad with pale isabelline hairs above, and ashy-coloured ones below; the feet-pads are black and the claws dusky. The ears are rounded, dusky in colour, and sparsely clad with ash-coloured hairs.

Length of head and body 6·1 inches, nose to eye 0·75, nose to ear-orifice 1·35, length of ear from meatus 0·87, hind foot from heel *s. u.* 1·1, fore foot 0·52, length of hair on middle of back 0·65.

The following are measurements of the skull of this specimen :—

	metre.
Total length	·039
Breadth across zygomatic arches	·021
Length of nasal bones	·013
Width of nasal bones behind	·0045
Width of nasal bones in front	·0053
Width of frontal between orbits	·005
Length of palatine opening	·011
Antero-posterior diameter of bony palate	·002
Width of palate between last pair of molars ..	·007
Length of series of upper molars	·008
Length of lower jaw from angle to symphysis	·025
Height to condyle	·016

This specimen is, I believe, correctly referred to *L. Roylei*, notwithstanding the difference in coloration and size from the typical example. The type seems not to have had any rufous patches on the fur; but the presence or absence of rufous colours in this genus seems to be of no specific importance. The Deosai *Lagomys* agrees well in size, colours, and cranial characters with an example from Sikkim in Mr. W. T. Blandford's collection.

XII.—Contributions to our Knowledge of the Spongida.

Order II. Ceratina. By H. J. CARTER, F.R.S. &c.

[Plate IX.]

Class SPONGIDA.

Order II. CERATINA.

ON reconsideration of the order Ceratina ("Notes Introductory to a Study of the Spongida," 'Annals,' 1875, vol. xvi. pp. 134, 135), which was proposed, among others, after an examination of *all* the specimens of Sponges then in the British Museum, I find, since having gone over, in a similar manner, those of